The Washington observations of the satellites of Saturn need revision and a complete reduction, and as I have not found time to do this, their publication is delayed; but anyone who needs my observations of Hyperion can have them.

1880, *January* 27.
Washington, U.S.

Observations of Mimas and of an Occultation of Rhea in 1879 *with the* 26*-inch Equatoreal at Washington.* By Prof. Edward S. Holden, U.S.N.

(*Communicated by Rear-Admiral John Rodgers, U.S.N., Superintendent U.S. Naval Observatory.*)

1879. *Sept.* 29.

W. m. t. p (estimated) 270°. Mag. Power 600 A; Wt. 4.

$10^h\ 27^m$. $p = 270°{\cdot}2$ (4).
$10^h\ 59^m$. $s = 28''{\cdot}62$ (4); satellite very faint; moonlight.

1879. *Sept.* 30.

p (estimated) 285°. Mag. Power 600 A; Wt. 4.

$10^h\ 27^m$. $(s) = 24''{\cdot}14$ (4) distance measured in the line of major axis of the ring; nearly full moon about 10° distant.

1879. *Sept.* 30.

Mag. Power 800 A.

$10^h\ 50^m$. I do not think it is up yet, to *s. p.* the end of the ring, but it is very nearly up.
$10^h\ 54^m$. I suspect I have made a mistake and that it was a little past at $10^h\ 50^m$; it seems to be past now. The seeing is growing quite unsteady (Wt. 2) and *Mimas* is v. F.
$10^h\ 59^m$. *Mimas* not seen after this with eye-pieces 400 A and 600 A.

1879. *Sept.* 30.

Mag. Power 400 A; Wt. 2.

[Occultation (disappearance) of *Rhea*.

$11^h\ 3^m$. *Rhea* is still visible, but very close to the limb of ball.
$11^h\ 10^m$. I no longer see any dark space between the satellite and the ball, but the planet's limb is unsteady.
$11^h\ 13^m$. Satellite seen less than half the time.
$11^h\ 15^m$. Satellite nearly smooth with the limb. Seeing much better (Wt. 4).

W. m. t.

$11^h\ 22^m$. Satellite seen perhaps a third of the time.
$11^h\ 23^m$. Seen for an instant.
$11^h\ 24^m$. ,, ,,

Rhea not seen after $11\ 24^m$. Very satisfactory observation.

The satellite seemed to grow smaller and more intense white in colour as it came close to the ball of *Saturn*. The colour may have been due to contrast with that portion of the ball near which it impinged. This was the south polar belt, which was a very dark dull olive.

The satellite certainly appeared smaller than usual and smaller than *Dione*, which was near. It is usually larger than the latter satellite.]

1879. *Oct.* 5.

Mag. Power 800 A; Wt. 4.

$9^h\ 41^m$. *Mimas* is just visible approaching *s.f.* conjunction—and very faint.

$10^h\ 11^m$. The sky is hazy, so much so that *Enceladus* near elongation (E) is quite faint, and the larger satellites show that there is a fog or haze around them.

Under these conditions I am not absolutely sure that this is *Mimas*, but if it is, it is just past, or a little past *s.f.* conjunction at $10^h\ 11^m$ W. m. t.

1879. *Oct.* 11.

$12^h\ 20^m$. *Mimas* first seen at this time (on account of clear space through the thin clouds or fog) and it is past the *n. p.* conjunction with end of ring by several degrees.

1879. *Oct.* 12.

Mag. Power 800 A; Wt. 2.

$10^h\ 27^m$. *Mimas* not yet up to *n. p.* Conjunction with end of ring.

$10^h\ 35^m$. A little beyond the principal division. *Mimas* not seen again till $10^h\ 55^m$, and then only for a moment.

$10^h\ 56^m$. It is probably past. Not seen again till

$11^h\ 8^m$. when it was certainly past. Only seen for a moment.

$11^h\ 12^m$. Certainly past (Hall).

Whole observation unsatisfactory, on account of unsteady atmosphere.

1879. *Oct.* 14.

Mag. Power 800 A; Wt. 3. Very hazy.

$8^h\ 27^m$. *Mimas* is, I fear, past [*n.p.*] conjunction a very little. This is the first I have seen of it. The planet is low

W. m. t.

and the sky hazy. *Mimas* cannot be seen with less than 800 mag. power, and 800 makes the images unsteady.

$8^h\ 32^m$. *Mimas* is certainly past, though I can only see it by glimpses. *Enceladus* near elongation is extremely faint.

$9^h\ 13^m$. *Mimas* is just barely seen with 800 A, and not with 600 A.

1879. *Oct.* 16.

p (estimated) 260°. Mag. Power 800 A; Wt. 3.

$10^h\ 27^m.5$. *Mimas* is pretty constantly seen, but is very faint. The sky is hazy.

$10^h\ 51^m.5$. *Mimas* about $4''$ *west* of the meridian through the end of the ring.

$11^h\ 4^m.5$. Nearly up.

$11^h\ 13^m.5$. Up.

$11^h\ 17^m.5$. Up, or possibly just past.

Mimas not seen after $11^h\ 18^m$, and only seen four times between that and $10^h\ 50^m$. Sky very hazy and observation unsatisfactory in the highest degree.

The above observations were all that could be obtained during the Opposition, using diligence. They are copied literally from the observing books.

Observations of Saturn's Satellites, made at Mr. E. Crossley's Observatory, Bermerside, Halifax. By Mr. J. Gledhill, F.R.A.S.

The instrument with which the following observations were made is an Equatoreal having an aperture of $9\frac{1}{3}$ inches.

Nov. 28th, 1879. Good definition. Power 282. The web was kept bisecting the ball.

Rhea in conjunction with the centre of the ball.

h.	m.	
10	40 G.M.T.	Conjunction has not yet occurred.
	48	In conjunction.
11	0	Certainly past conjunction.

Clouds prevented the observation of Tethys and Enceladus.